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ABSTRACT

Major elements involved in lecturing are considered, and the views of six professors concerning lecturing are included. The importance of preparing the lecture and being thoroughly familiar with the material are stressed. Adequate preparation eliminates the need for the professor to read notes during the lecture. The need to be sensitive to attentiveness and moods of students in the classroom and the usefulness of changing pace in the lecture process are noted. Techniques for challenging students or arousing classes who are sleepy are described. Views on the strucure of an individual lecture ranged from the belief that the material should have a definite beginning, middle, and end to the opinion that the lecture should be loose and open. The relationship between research and teaching, attitudes toward the use of instructional aids, the use of course outlines/notes, notetaking by students, and the use of textbooks are considered. All of the interviewed professors grade their students on a combination of things, including papers, assignments, class tests, and final examinations. The grading system of each professor is described. Their enthusiasm for teaching and students as a factor influencing lecturing, course, and the importance of a sense of humor are discussed. It is concluded that the three humanities professors want to motivate their students to learn to develop enthusiasm for their fields, and hopefully to gain insight into what they consider to be important problems. Concepts and frames of references, rather than details, are of greater importance. The three science and engineering professors aim for clarity. (SW)

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EDUCATIONAL DEVELOPMENT SERIES

McGill University

THE LECTURE

A vital component of university life

THE LECTURE - A VITAL COMPONENT OF UNIVERSITY LIFE

A Guide to Assist Faculty

prepared by
Cecily Lawson-Smith

Published by the Office of Educational Development

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and has been approved by
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Preface

This booklet is meant to be easily read, even entertaining. Its informal, interview style reflects the means used to collect its material.

A small Editorial Group - Professors G.C.B. Cave, M. Gopnik, and W. Westley - was convened at the request of the Senate Standing Committee on Educational Development. The Group met over lunch separately with each of six McGill professors from the Humanities, Sciences, and Engineering. They are among McGill's recognized masters of the art of lecturing. The conversation consisted of an informal statement by the professor on lecturing, followed by questions and answers.

Ms. Cecily Lawson-Smith prepared the manuscript from taped recordings of these fascinating chats.

The booklet touches on the preparation of lectures, lecturing styles, lecture formats, note-taking by students, the role of the textbook, grading systems, and rapport with the class.

The booklet is not intended as dogma; nor is it a standard reference work. Rather, it is source material for faculty to read easily and with interest, perhaps to glean a few useful ideas which they might like to try in their own teaching.

THE LECTURE - A VITAL COMPONENT OF UNIVERSITY LIFE

To most people the word "class" in a university setting immediately conjures up visions of a lecture hall. Certainly one of the oldest methods of teaching, lecturing is still, despite the numerous innovations of the past decade, the most popular. The concept on which it is based is superficially very simple - the passage of information from one person to an assembled group. And yet most of us know from sometimes bitter experience, that those who lecture run the gamut from excellent to dreadful.

The reasons for this are numerous. Many people believe that great lecturers, if not poor ones, are born, that they cannot be made. This belief is based on the assumption that the qualities necessary to being a good lecturer are so bound up with personality characteristics that expecting someone to change from a mediocre lecturer to a good one is extremely unrealistic.

To write a booklet about the art of lecturing with the express intention of helping professors to improve their lecturing abilities was seen in some quarters to be an exercise in futility. We beg to differ. During the 1977 Winter Term, a small Editorial Group and the writer interviewed each of six McGill professors who are among the best lecturers on campus. They were - from the Faculty of Arts, Professor George Galavaris of the Department of Art History and Professor Robert Vogel of the History Department; from the Faculty of Science, Professor Ronald Melzack of the Psychology Department and Professor Arthur Grosser of the Chemistry Department: and from the Faculty of Engineering, Professor David Selby of Civil Engineering and Professor John Grace of Chemical Engineering. Although the subject matter, the personal styles, the techniques and indeed the objectives of these lecturers differed in many ways, several

similar threads ran through the observations of each of the interviewees. These similarities, and indeed the differences, led to the conclusion that although there is no one formula for "being a great lecturer," there are certain principles that all six professors endorse.

It is fascinating and instructive to see how each professor applies these precepts in a different way - fashioned by his personality and discipline - while achieving the same ends. And that is what this booklet is about. But first, a brief overview. Where do they agree? Where do they differ?

All prefer the live lecture. They like it, it works for them, and above all it has a human element. "There are no substitutes for what the voice communicates, what the personality communicates. The book does not do it. The machine does not do it" (Galavaris). And Professor Vogel adds: "If you are dealing with people, if you are trying to weave a tapestry, to make things live, you need the lecture."

Characteristics common to all six interviewees are their deep love of teaching, their genuine liking for students, and their fascination with their own discipline. They are considerate toward their students. For example, they plan their lectures with humour. During a lecture they are extremely sensitive to the mood of the class, and they promptly change pace, style, and even content when necessary. "You must have a sort of antenna out, so you can feel whether the class is with you" (Melzack).

The three Humanities professors strive to convey ideas, not data, and to motivate the students to taking a sincere interest in the subject. They relate that subject to man's human relationships. "Our duty in education is to create really good, responsible, human beings" (Galavaris).

The three Science and Engineering professors believe that their students, by having chosen a particular profession, are already motivated - but the lecturer must still capture the imagination of the class. To them, clarity is an essential

characteristic of a good lecture. They must get the point across to the class in a totally unclouded way.

What guidelines do these exemplary professors follow when they design a course? Do they specify objectives? Do they encourage, or discourage note-taking? How important is a text-book? What grading system do they use? How thoroughly do they prepare for their lectures?

Every professor emphasized the need for very thorough preparation of the lectures. "Organization and presentation of the lecture must be compellingly clear. This demands meticulous preparation" (Grosser).

It was in the format used for a lecture that interesting differences began to emerge. Should a lecture have "a beginning, a middle, and an end?" Professor Galavaris (Art History) prefers the self-contained lecture planned to the utmost detail (but he does not hesitate to extemporize if the class is not responding well). These self-contained lectures are so constructed as to build up the larger unity of the course. Professor Vogel (History), on the other hand, stresses the need for an overall unity in his course. He feels that a self-contained lecture, "cutting the course up into little pieces," destroys its unity.

Is it important to state objectives to a class? Most think it is. But each has his own conception of an objective, and what purpose it serves. All interpret the term "objective" in a broad way. None uses a simple mechanistic definition such as "At the end of this lecture you will know, or be able to do the following things: 1 ---, 2 ---, etc."

During the lecture itself, all six professors try to get "the students' brains going with your brain" (Selby), or "to get them to think along with you" (Vogel). Thus, all six professors see the lecture as a joint, cooperative effort involving both the students and the professor.

Capturing the Essence

Before discussing in detail the techniques, the do's and don't's of lecturing, as gleaned from the comments of these professors, let's first meet them, and delve a little into what gives each his own individual and successful style.

George Galavaris: The Inner Life

"I have found in all the years that I have been teaching that the students are vitally concerned with problems of the inner self. A solution perhaps or problems parallel to their own are found in History and above all in Art. If one presents a subject in this way then it becomes vitally interesting." Professor Galavaris loves his subject matter, loves teaching and is vitally concerned with his students as human beings. The metaphysical side of man is an important aspect of his course material. His students find that "Hellenistic man was not different from the man of the twentieth century, that the problems of the Roman man were very much like our own and that what the Gothic man was striving for is something that many people strive for today." His purpose is to convey ideas, not data, and to excite the students about the subject matter. "I think that part of our duty in education is to create really good human beings. I am sure that even if our students eventually go to work for a bank, they will have a special sense of responsibility even if they don't remember the dates of Gothic Cathedrals."

Robert Vogel: Think Along With Me

Professor Vogel, on the other hand, tells his students that "I'm not marking their personalities, I'm marking their History." But one of his objectives - to motivate the students to take a real interest in the subject matter - is the same as that of George Galavaris. Professor Vogel wants the students to define concepts, to make mental leaps as he makes them - in short, think

along with him. How does he accomplish this? "I tease them. I try to confuse them in order to get them to rethink their prejudices. I will even sometimes present what I think is obviously false information in order to get them to challenge authority. It is only by making students realize that they make certain unconscious assumptions about many things that we can get them to challenge themselves and others and to think critically." Probably more important are his abilities as a story-teller, a lover of the gossip of history. Through this, he tries to impart to his students his philosophy that, "In human history, the differences are interesting but the similarities are important."

Ron Melzack: Tell a Story

Professor Melzack's objectives in teaching his course are similar to those of Arts professors Galavaris and Vogel. "The purpose of a lecture is to get the students enthusiastic, interested, motivated, excited about the material of the course. So I'm much less concerned about the content of the lecture. Basically, I try to tell a story, not in just a lecture, but in the whole of the course." When Ron Melzack taught a course in motivation, his story was about pain. Now it's different. "Ever since I read a particular description of a massacre of a family of Jews in Russia, I've always wanted to know how you can get civilized, intelligent people to kill each other in mass numbers. So I say to the class that I'm going to tell them what sort of reading I've done in this, why some people think that man has an instinct to kill or that he learns to kill, whether we become prejudiced because our parents teach us to be prejudiced or because there is an innate aspect to becoming prejudiced. I tell them that this is the story I'm going to talk about and I embark on it. Now while I'm doing this, I digress continually. I get into the most complicated anatomy and physiology but the students are rarely aware that this is normally dry stuff. I

sneak it in as part of the larger problem." Professor Melzack's enthusiasm about the subject matter is boundless and he tries to communicate this enthusiasm to his students by giving them a feeling of intimacy with the scientists whose work they are studying, telling them about their personal quirks and presenting them as human beings who are trying to solve problems.

Arthur Grosser: All the World's a Stage

Professor Grosser is a man of great natural wit. His subject matter is chemistry and although he believes that students will learn more if they enjoy the learning situation, his main objective is clarity. "The organization and the presentation must be compellingly clear." This demands meticulous preparation. Grosser underlines the importance of empathy with the students, a sense of humour and of introducing some sort of applicability to the lecture material. "I think a lot of students go in and listen to the lectures and the lectures are okay but they don't get a kick out of them. They're just pure "lectures," one of those tasks that you are forced to do because you're growing up and your mother tells you to go and sit in this lecture and pass the exam with an A and in turn she will love you. If there's some connection to your own life, I think that what you are hearing can become more enjoyable." Professor Grosser commented on the psychological side to lecturing. "I think that there has to be a distinct element of personal pride at stake in the lecturing process. On the other hand you will never get the humour and empathy if there is an element of ego defence involved. So you have to have stripped yourself of your ego but yet you still have to maintain a heavy commitment to personal success at the job of lecturing."

John Grace: The Importance of Examples

Teaching engineering students involves one basic difference from teaching arts and even science students. Motivation is not a problem; most students are there because they want to become engineers. The barrier to be hurdled is clarity. Professor Grace's subject matter is fluid mechanics. "When I learned fluid mechanics at a different university, it was terrible. I really had an awful experience. I hated the material; I hated the lectures and I became grimly determined that I was going to do much better." Grace does this by attempting to be very clear and by giving his students examples to illustrate the concepts they are studying. He tries to use examples that will capture the imagination of the class - bringing the shape of golf balls and the whys and wherefores of pitchers' curveballs, tennis players' spins and golfers' slices. Good examples, he says, must appeal to their curiosity or to their sense of practicality. Professor Grace likes students and feels it's important that they know he's on their side.

David Selby: Clarity

Although Professors Grace and Selby have different styles and undoubtedly come across to their classes in a different way, their stated approaches are very similar. Selby too emphasized clarity in the passage of information from him to his students. "You have to have a teaching point and you have to make sure that the examples that you use get this point across in a totally unclouded way. You have to make sure that their brains are going with your brain and you have to hammer away until they understand what you're trying to teach. You have to give, give, give." Both Selby and Grace underlined the importance of obtaining the respect of their students.

Having sketched in very broad terms the styles of these six lecturers, let us turn to a discussion of some of the major elements involved in lecturing.

The Inverse Rule: Preparation

"I remember my first time in front of a class. I was in my first year of graduate school. I went in there and I wanted to show this class that I was very relaxed. So I sat down on the little table in front and I said, 'Now you have to fill out these cards,' and I held up the card - it was small. I looked at it and I couldn't believe my eyes - my hand was shaking. Next day I went to see my professor and I said, 'Gee, this isn't easy. I'm up there and I'm sweating and shaking.' He came down with his dictum - he said that the degree of discomfort is inversely proportional to the amount of preparation. So, being a young and impressionable fellow, I took that to be gospel."

Not all of the professors interviewed received The Word from on high as did Arthur Grosser quoted above, but most do pay it the same heed. "The one necessary thing is that you prepare your lecture," said George Galavaris who in a survey of alumni of Canadian universities undertaken by Edward Sheffield of the University of Toronto was voted one of the best lecturers in Canada. Galavaris, who makes substantial changes in his courses from year to year, spends six weeks during the summer restructuring and revising his own course notes. Each lecture is then reviewed and the final details sorted out the day before the class.

Although each professor has his own means of preparation, most seem to follow a similar two-tiered method. Professor Selby takes the process one step further and prepares for each lecture in three separate phases. "I have a distant preparation which takes place about a week ahead of the lecture. Then I have a detailed, middle preparation which I generally do the day

preceding the lecture. But the most important is the hour immediately before the lecture. I don't want to talk to anybody. I don't want to look at anything else; I just want to have this thing so totally in me and in first order availability that there is just nothing else in my mind at all. I find that necessary."

Professor Melzack follows the same cramming pattern, using detailed notes prepared well ahead of time. "I just read them and read them and read them until I'm saturated. Then I go in and I talk to the students." His distant preparation takes place during the summer. "If I prepare a new set of lectures I spend many, many hours sketching things out mentally. I start thinking about it at the beginning of the summer and I plan out the whole course."

Professors Grosser, Vogel and Grace also noted the importance of preparation. "You cannot get up there and sort of ramble and hope to have people nodding and saying yes, you're right," says Grosser, "You can't start to give a good lecture until you know backwards and forwards what it is you have to say."

Lecture Does Not Equal Read

An important corollary of adequate preparation is that it does away with the need for the professor to read notes during the lecture. Not one of the professors interviewed liked to depend on his course notes. "I've gone into class with a set of notes and have come out and realized that I've got the wrong set of notes. This has happened to me on many occasions," commented Robert Vogel. "I feel it is terribly important not to read one's lecture notes," said Ron Melzack. And David Selby felt that "Manuscripts hamper your style. I rarely open my notes, but do the lecture 'off the cuff' totally."

Change of Pace

Everyone who's ever lectured knows what it's like to face a class that's inattentive, fidgety or taking advantage of a God-given opportunity to catch up on their sleep. Which means they're not listening. How do you deal with this?

All of the lecturers we spoke to pointed out the need to be sensitive to the changing moods of their classes and to adapt their style and if need be their material to these moods.

"I think it was the Apostle Paul who said that you have to be all things to all men," commented David Selby. "I think that this is vital. I control them. I anger them. I sometimes use point-by-point teaching. I sometimes jump around a fair amount and then come back and fill in the details. Sometimes I am pleasant and joke around; sometimes I become tough and nasty because I find that this is necessary."

George Galavaris also commented on the need for sensitivity to the moods of the class. "One has to be prepared to change," he said. "If you go in the morning and some students are late or didn't get enough sleep the night before or you simply feel that something is not quite right, you have to go out of your way to say something different to wake them up. Once they are with you, you begin your lecture. Then if you find that you have lost them along the way either because the material was too difficult or too concentrated, you must be ready to stop and find a relative question, which is what I do, and ask the class."

Ron Melzack takes it one step further; he always brings enough material to do two lectures. In this way, if the class is bored with that day's material, he can skip to a later section. And if they're particularly fascinated by one point, he will elaborate on that for the duration of the class. "You have a sort of antenna out. You can feel whether or not you have the class with you. When you look at them you can tell whether they're looking back at you or chatting with someone or dozing off to sleep. The sound level in the class gives you a cue as

to whether or not they're with you. I find that while I'm talking I constantly monitor whatever these cues are and if I find that I'm losing the class, I switch onto something that will get them back with me. I think that it is extremely important to be aware of how your class feels about a given lecture."

John Grace is also very deliberate about changing the pace in his classes. "If one goes in there every time and gives a straight lecture, students quickly become bored. I find it useful to vary one's method of approach. Some days I go in there with overhead transparencies, other days I use a short film, demonstration, or student presentation. I try to scatter these through the course so that I have one on average every third lecture."

Arthur Grosser finds that reacting to the class's moods "is a fairly subtle business; maybe you're even doing it unconsciously. You wouldn't necessarily say, 'I am going to stop and do this section over again,' but you might start stressing things more forcefully because you find that they are not there or punching it a little more because there is too much coughing."

Robert Vogel goes one step beyond a change of pace. He finds it useful to vary the level at which he pitches his lectures. "I have no hesitation in using three specific techniques in this. One is the straight-forward technique which is to say what I really want to say at roughly the level which I assume the class is at. The second one is to pitch the lecture at a level which they clearly cannot comprehend. For example, I will on occasion, when dealing whith Church/State relations in the Middle Ages lay out a concept of legitimacy with regard to Church and State which is so complex that most of the class will not be able to understand it. I will do this deliberately in order to show the class that human institutions are very complicated and that history is not simply a matter of dates and definitions. One needs to really think very hard in order to

understand. The third technique has to be used carefully. I use it in reaction to a sleepy class. I will begin by gradually putting in some false information and if no one notices, I will escalate until I have reached a stage of total absurdity. And I wait to see when they start putting down their pens. Let's say I am dealing with Bismarck's foreign policy after 1871. I have already dealt with his domestic policy which is quite interesting but his foreign policy after 1871 is not particularly exciting. If the class is too sleepy, I will begin to get Bismarck to do things which are obviously wrong, perhaps put in a few wrong dates. If nobody notices, I will go on to make him do things which he clearly could not have done because he had already been dismissed. On one occasion, I have taken a class all the way in and made Bismarck to declare war in 1914 until somebody finally said, 'Hey, what are you doing?'"

George Galavaris too finds that exaggeration is a useful way to challenge his students. By taking an extreme position on a particular point, he forces them to examine their thoughts on that topic.

Beginning, Middle, End

All of the professors were asked how they structured their individual lectures. Did they feel it necessary to construct each as a separate entity with a definite beginning, middle and end? Their answers ranged from "Definitely" to "No Way."

The most definite of the definitely's came from David Selby who commented, "You can't enjoy excursions into uncertain lands, you have to stay right on subject. If I get a hand up at an inconvenient place, I acknowledge the hand and when I get to the end of that section I'll come back and ask what the question is. I never change my teaching plan. If I'm going to do a certain thing in a certain lecture then I do it come hell or high water!"

George Galavaris also prefers the self-contained lecture. "I don't like to carry material from one lecture to the next because by the time the next day arrives something is lost so the lecture fails to carry an impact. You must prepare the material so that you know exactly where you are going to start, the middle and the conclusion. Everything to the utmost detail must be ready." "But," he adds, "you must be ready to change everything when you go into the actual class."

Arthur Grosser's response to the question of structure was "I like to have a beginning and an end. I don't really care about the middle too much." In a more serious vein, he explained that he does construct each lecture as a separate piece but "there may be too many questions and the end that you plan is not the end. When the little bell starts tinkling over there, I think you just make a new ending."

John Grace constructs his courses in sections rather than individual lectures. "It's not structured in such a way that I plan what is to be done in a particular hour. I do try to say that roughly speaking I expect to have covered topic A at the end of so many lectures and topic B in so many hours." He adds continuity to the course by beginning each class with a very quick summary of the previous lecture and asking the students a few key questions concerning the material which was covered.

Ron Melzack doesn't like the structured lecture. "I think it should be loose and open. I find at times that I cram a lot of material. I find that I sometimes talk about a topic that turns the students on and I enjoy it and I start talking about it much more than I expected to. So, I will have ended up spending the whole of the lecture on what I really had expected to spend only five minutes on. Or I can get into something that I want to spend a long time on and I can see that it's putting them to sleep, so I get right off the thing. That's why I always go ready to give two lectures worth of material."

Although Professor Melzack's lectures are not structured, he does make use of one technique fairly often: "I usually try to stop the lecture at a time when I'm about to say something important. I say 'Look, we've just talked about this very important problem but I don't have the time to give you the answer now, let's leave it till next week.' It's a ploy; they catch on and they get a kick out of it. They find it funny."

Robert Vogel uses the same sort of "soap opera" technique. He is adamant about the disadvantages of the self-contained lecture. "I believe that there is a real problem of unity. The lecture should not in the formal sense have a beginning, a middle and an end. In other words, in order to try and create a net of ideas, you don't cut concepts into little pieces. You can deliberately try to make the lectures fit together by leaving certain ideas dangling for the next lecture. What I try to achieve in this process is to get students to anticipate what is coming next; they may even think about the course between lectures, even, oh most happy thought, discuss ideas amongst themselves. If that can be achieved, then it is one of the most useful accomplishments of the technique."

Sense of Humour

It is interesting to note that some of the professors interviewed commented on the importance of a sense of humour. Ron Melzack said, "I think humour is terribly important. Where it's possible, I try to be funny. I'm not talking about telling jokes. I'm talking about casting a funny light on things, showing that an experiment has a sort of cute or delightful aspect to it."

Professor Grace explained, "You want to obtain the respect of the class; but you want to be respected as someone who has learned the material before and is approachable, not as someone who is domineering and overpowering. One way to achieve this balance is to display a sense of humour."

Loving It

The professors either expressed or implied a real liking for students and genuine love of teaching. Some said that their task was, of course, made easier by the fact that they were teaching the most interesting and fascinating of subjects.

Their concern for their students was manifested in a number of ways not directly related to their course. Apart from making their lectures as interesting and as clear as possible, they tend to go out of their way to be of help to the students. George Galavaris, for example, devotes a couple of lectures at the beginning of Term to telling his classes how to read and how to study effectively. Professor Selby gives lectures on how to write exams and how to find a job.

This enthusiasm for teaching, for students, and for a particular subject is undoubtedly one of the key ingredients for good lecturing. Ron Melzack suggests that it is a responsibility of a departmental chairman to ensure that his colleagues are teaching courses in which they are truly interested. This seems to be one way to engender enthusiasm among the professorial ranks.

One factor which seems to have a definite bearing on enthusiasm or the lack of it is the number of years that a professor has taught a particular course. Most of the lecturers interviewed felt that there was an optimum number of years - usually four or five - for teaching the same course. After that boredom sets in. "I never teach a course for more than five years," said Ron Melzack. "After five years, I lose my enthusiasm; it's no longer fun. The third year is usually the best." "Everytime I give a course," said John Grace, "I try to improve on some aspect of it. I find that the first time I give a course it involves an enormous amount of work. The second is virtually the same because there's so much you want to improve. The third time it begins to get easy. But after awhile you start to become bored with the material and you probably lose spontaneity in

class. I'd say that the optimum number of times to give a course is somewhere between three and six."

George Galavaris doesn't allow himself to become bored. He changes his course - if not the content, at least the outline, the choice of visual materials and the presentation - every year. David Selby, at the other end of the spectrum, finds that it is only in the third or fourth year that the bugs are moved out.

Research and Teaching

The importance of research to teaching is practically a motherhood issue in most universities, the implication being that research will keep an individual at the forefront of his field thus making him a more interesting and vital teacher.

Some of the professors interviewed were asked their opinion on this matter. The general view was that an active interest in research was not a pre-requisite to being a good lecturer. Both Professors Galavaris and Melzack felt that their research was important to them for the purpose of lecturing, but both went on to say that this was probably not the general rule. "I think both go together so wonderfully," said Professor Melzack, "that I would hate to be a researcher without teaching and I would hate to teach and not do research. But the correlation between being a good teacher and a good researcher is probably not very high." Arthur Grosser felt that "It doesn't really make much difference if the guy is doing academic research in areas which would be considered merit-winning by a promotions committee. But if he's doing things that are intellectually stimulating to him and might be intellectually stimulating to someone listening to him talk, then that's important because that's where he gets his new ideas."

Instructional Aids

The lecturers were evenly divided in their attitudes towards the use of instructional aids. Professor Grosser was the most

enthusiastic advocate of the use of teaching aids and argues that most professors avoided them simply from lack of expertise. He felt that every building on campus should have a workshop for slide copying and other simple technical jobs and that training in these areas should be more actively encouraged among the teaching staff.

Professors Grace and Galavaris both employ teaching aids in their lectures. Grace finds short films, slides and demonstrations useful to illustrate certain points and to change the pace of the lecture. Galavaris, on the other hand, teaches a discipline which demands the use of slides and one has the impression that if his subject matter were different, he would do away with technical devices and rely entirely on the human element in his lecturing.

Neither Robert Vogel nor Ron Melzack mentioned using teaching aids and David Selby said that he limited their use as much as possible. "I find that they produce barriers. They get between me and the class."

Course Management

The organization of a course involves a number of what could be termed "management" details. These include such things as course outlines, textbooks, exams and papers. The professors were asked how they handled these aspects of their courses.

Course Outlines & Course Notes

One of the elemental rules in the "How to Lecture" literature centres on the importance of stating one's objectives, on telling the class where one is headed. Our six lecturers were asked to what extent they adhered to this dictum. Professors Grace and Galavaris both felt it was important. Galavaris gives his students a detailed syllabus on the course containing outlines of the lectures. Grace's courses are divided into topics each taking approximately two weeks. He gives his students both

a complete course outline on the first day of class and notes on each topic before he deals with it in class, pointing out the difficult sections and suggesting that they be read before the class.

Professors Grosser and Selby hand out what could be called skeleton notes, containing diagrams and drawings which would be time-consuming to copy in class. Neither agrees with distributing detailed notes: Grosser feels that this encourages the students to read the notes as he is lecturing while Selby finds that, "If you hand out notes, you will get a 20% drop in attendance."

Professor Melzack does not give his students notes or a written course outline, but he does tell them where he's headed. Professor Vogel is the only one of the six who deliberately avoids outlining the course to the students. "In the past when I've told the class what I planned to do in the following three weeks, it hasn't worked. If everyone knows where you're going, all they get down are the dates. They are not thinking." Vogel wants to tease and confuse his students into thinking, into re-examining their preconceptions about history. Distributing a course outline, he feels, defeats his purpose.

Note Taking

Linked to the subject of hand-outs is the question of note taking by the students. Most lecturers would like to see the ballpoint pen banned from their lectures; they would prefer that their classes think about what they are saying rather than "do a stenographic number," as Arthur Grosser put it. Is there a way to cut down on note-taking? We asked our lecturers about their experience in this area.

The two professors who give their classes extensive course notes don't find this a problem. Professor Galavaris' students begin the class by taking notes but after the first month they follow his advice, look at the pictures and jot down only a few

key words. Professor Grace finds that most of his students sit back and take very few notes.

Professor Selby indicates to his classes exactly where notes should be taken and he dictates those notes. He does occasional spot-checks to ensure that he is getting across to his students.

Professor Melzack finds it close to impossible to discourage his students from taking notes, "I tell them that I am trying to get across an idea, that I don't want them to sit there scribbling all the time. From time to time, I say that I'm not going to ask any questions on any of the material in the next four lectures. And they still take notes."

Professor Vogel has a theory about note-taking. "In the first year, they don't know what to take down so they take down everything and get many things wrong. In second year, they are too busy with their social life so very little gets taken down. In third year, they've learned the technique of taking down all the right things but it goes directly from ear to the hand without ever passing through the brain. The purpose of lecturing is to prevent all this from happening and the only way to do that is to force them to think along with you."

Text

Textbooks seem to be of minor interest to most of the lecturers. John Grace finds that the books in his field are unacceptable; he dispenses with their use and hands out notes to replace them. David Selby, who also teaches engineering, recommends a textbook and suggests that his students use if for background reading. Apart from that, it is ignored. Robert Vogel is another lecturer who does not assign a textbook, but he does have a rather extensive reading list. It is divided into three sections, the first of which contains three or four surveys. ("It is one of my great struggles to try to persuade the class that I really don't know which is the best survey.")

The remainder of the list contains a variety of styles of history - biographies, intellectual history, narrative history, analytical history, etc.

Ron Melzack has two textbooks for his introductory psychology course. Chapters are assigned to be read every week and problems can be discussed in weekly conferences. But the contents of his lectures bear no relation whatever to the texts.

Evaluation

All of the professors interviewed grade their students on a combination of things, usually including papers, assignments, class tests and examinations. Many make some type of discretion available to the student.

"I feel that we make a mistake when we confuse the learning process with the evaluation process," said David Selby. He gives four class tests per term to show the students what they can expect on the final exam and, more importantly, to give bad exam writers a chance to improve on this skill. The final is worth 60%, and the course work 40%, with the proviso that the percentage achieved on the final is the lowest the student will obtain. Course work can only increase the mark.

John Grace assigns even more importance to course work. A term paper, problem assignments and class quizzes account for at least 60% of a student's grade, with the remainder assigned to the final exam. A student can, if he wishes, decide not to do the assignments. In this case his mark will be proportionately more dependent on the final exam. All examinations and quizzes are open-book.

In Professor Vogel's course, two term papers and a mid-term account for 50% of the mark, with the final exam making up the remainder. The mid-term can be taken in either December or January or both, in which case the best mark counts. The exams offer a large amount of choice, permitting the student to select

areas which interest him and to choose the level, be it factual or philosophical, at which he wishes to respond.

Professor Melzack's grading system consists entirely of exams - one in November worth 10 marks, one in December worth 30 marks and a final exam in April which accounts for the remaining 60 marks. With the exception of the November exam which consists of answering two essay questions, all the exams are approximately two-thirds IBM questions and one-third essay questions. The lecture material accounts for one-third of the content of the exams, and the textbooks make up the remainder.

George Galavaris de-emphasizes the final exam. "In the early years, I did the normal official examination required at the end of the year and I came to realize that this simply did not work. It was not suited to the study of Art." Now he gives his students a test every month. Each one is different and each is designed to test a different skill. In one for example, the student is asked to distinguish works from one another, thus testing their eyes. Other quizzes consisting of essay questions determine the way in which they write and the way in which they think. Members of the class are also assigned one term paper, the subject being chosen by the student after consultation with the professor.

Conclusion

It was not the intention of this booklet to produce a blueprint for "perfect lecturing." Indeed, that would have been an impossible task. The lecturers we spoke to have different personalities, they teach different disciplines and their objectives vary. The Humanities professors (Galavaris, Vogel, Melzack) want to motivate their students to learn, to develop an enthusiasm for their fields and hopefully to gain insight into what they consider to be important problems. Details and facts are not of first order importance; ideas, concepts and frames of reference are.

The Science and Engineering professors (Grosser, Grace, Selby), on the other hand, aim for clarity. Their students are for the most part already motivated, so their task is to present the material in such a way that it will be easy to understand.

Although they differ on this point, the lecturers have much in common. All love teaching and have a genuine liking for students. Most find it easy to empathize, to put themselves in the place of their students and to plan their lectures bearing in mind the problem areas and potential rough spots for the class. All are extremely organized, well prepared and very knowledgeable about their subject matter.

We asked a few about the criteria they would use for choosing the lecture method over other methods. Interestingly enough, though we tend to associate lecturers with large number of students, none felt that the size of the class was a factor. Many said they would lecture, perhaps with certain changes in style, whether they had a group of 10 students or 500 students.

All of the professors chose the lecture method because they like it, it works for them. But they feel that others may choose it for other reasons, for example, as Arthur Grosser says "because they don't want to see themselves in flaming colour on a television monitor."

They all felt that the big advantage of the lecture method is its human element. "There are no substitutes for what the voice communicates, what the personality communicates," said George Galavaris. "The book does not do it. The machine does not do it." Arthur Grosser commented that sometimes it is only with the lecture method that dreary material can be made interesting. "You can impress upon the students the force of your personality in the service of your discipline. You can tell them that they've read the textbook, but it's a lot more interesting than that, a lot more stimulating than that, and I am going to show you. I have all these things to tell you that you have never heard before."

It is the story-telling which represents the important personal element in Robert Vogel's classes. "If you're not really interested in the gossip and you're not really interested in the story-telling, then it might be useful not to lecture."

The subject matter too can be a determinant of the teaching method. "If you are dealing with ideas and with people, if you are trying to weave a tapestry, to make the thing live, you need the lecture," said Robert Vogel. Arthur Grosser's comments were to some extent similar. He feels that the lecture method can help to lighten dull theoretical material. George Galavaris suggested that the lecture method lends itself best to survey courses. "When the student needs to have the overall picture, the role of the teacher in this method is very important."

Lecturing is a very old form of teaching and it will probably remain the most popular one for years and years to come. The professors who do it well work hard at it and they reap the benefits of their labours - mostly in the form of verbal appreciation from students, both present and past.